

**REMARKS**

Reconsideration of the rejections set forth in the Final Office Action mailed February 13, 2004, is respectfully requested. Claims 1, 14, 21, and 28 have been amended. Claims 5-6, 18-20, 25-27, 35, and 40-66 have been canceled. Claims 1-4, 7-17, 21-24, 28-34, 36-39, and 67-89 remain pending. Support for the amendments can be found in the specification at, e.g., page 7, line 19 – page 8, line 5; page 8, lines 24-30; page 20, lines 8-18; and page 22, lines 8-15. Therefore, these amendments have been made without the addition of new matter.

35 U.S.C. § 112

Claims 1-4, 7-17, 21-24, 28-64, 36-39, and 67-89 were rejected under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the written description requirement. In particular, the examiner alleges that there is no written basis for the practice of electrode potential for pH change to produce acidic or basic conditions. Applicants have amended independent claims 1, 14, and 21 to specify that “*R requires activation by a pH change in an overlying solution generated by providing an electronic potential at at least one electrode of the microarray.*” Claim 28 was similarly amended. Support for these amendments can be found in the specification at, e.g., page 7, line 19 – page 8, line 5; page 8, lines 24-30; page 20, lines 8-18; and page 22, lines 8-15. Therefore, Applicants respectfully request withdrawal of the rejections and reconsideration of the claims as amended.

Art Rejections

Claims 1-3, 7-16, 21-24, 67, 72, 73, 75, 81, 82, 84, and 87-89 were rejected under 35 U.S.C. § 102(b) and (e)(2) as being allegedly anticipated by Heller et al. (U.S. Patent No. 5,632,957). Claims 1-4, 7-17, 21-24, 28-34, 38, 67, 69, 72, 73, 75, 81, 82, 84, and 87-89 were rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Heller et al. (U.S. Patent No. 5,632,957), taken in view of Meade et al. (U.S. Patent No. 5,770,369). Claims 1-5, 7-17, 21-24, 28-34, 38, 67, 69, 72, 73, 75, 81, 82, 84, and 87-89 were rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Heller et al. (U.S. Patent No. 5,632,957), taken in view of Meade et al. (U.S. Patent No. 5,770,369), taken in further view of Dorner et al. (U.S. Patent No. 6,121,489).

Claims 1, 14, and 21 are amended to specify that “*R requires activation by a pH change in an overlying solution generated by providing an electronic potential at at least one electrode of the microarray.*” As acknowledged by the examiner in the office action mailed on July 22, 2003, Heller does not disclose an activation step prior to participating in a binding reaction to a derivatized biomolecule. (Page 6)

In addition, Meade et al. does not teach or suggest activation of a component of a permeation layer “*by a pH change in an overlying solution generated by providing an electronic potential at at least one electrode of the microarray*” In the previous office action, the examiner stated that “[t]he practice of using specific hybridization conditions is deemed an activation prior to binding occurring as required in instant claims 4, 17, and 28 via treatment with buffer components.” (Office Action mailed July 22, 2003, page 7, para. 1). The examiner also stated that “it would have been obvious to someone of ordinary skill in the art at the time of the instant

invention to practice the Meade et al. hybridization conditions for such reactions as performed in Heller et al. to result in the particular instant claim embodiments directed to activation of the DNA capture probe of Heller et al. in order to result in binding to a derivatized biomolecule or target nucleic acid ....” (Office Action mailed July 22, 2003, page 7, para. 2). Applicants respectfully disagree. The hybridization conditions that Meade et al. describe at, e.g., Col. 11, lines 34-40, refer to the conditions used to facilitate hybridization of the target sequence to the probe, not the activation of a component of the permeation layer prior to reaction of the component with another P-X-R group or a biomolecule (e.g., target sequence or probe) to the permeation layer. (See Col. 11, lines 18-40) Additionally, the currently pending independent claims require activation of **R**, a component of the permeation layer, before attaching to a derivatized biomolecule or another P-X-R group, not activation of a DNA capture probe in order to result in binding to a derivatized biomolecule or target nucleic acid as alleged by the examiner.

None of the cited references teach or suggest activation of a component of a permeation layer “*by a pH change in an overlying solution generated by providing an electronic potential at at least one electrode of the microarray.*” Therefore, Applicants respectfully request withdrawal of the rejections and reconsideration of the claims as currently amended.

For all the foregoing reasons, Applicants assert the claims are in condition for allowance. Favorable action on the merits of the claims is therefore earnestly solicited. If any issues remain, please contact Applicants’ undersigned representative at (949) 737-2900. The Commissioner is

hereby authorized to charge any additional fees that may be required to Deposit Account No. 50-0639.

Respectfully submitted,  
O'MELVENY & MYERS LLP

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By: Diane K. Wong  
Diane K. Wong  
Reg. No. 54,550  
Attorneys for Applicants

DKW/dnd

O'Melveny & Myers LLP  
114 Pacifica, Suite 100  
Irvine, CA 92618-3315  
(949) 737-2900